Northwestern High School
G2138 West Carpenter Road | Flint, Michigan | 48505

Introduction

On Saturday, December 30, 2015, the Department of Licensing and Regulatory Affairs (DLARA) and the Department of Environmental Quality (DEQ), collectively (Team), conducted a sampling assessment of the plumbing system at the Northwestern High School to determine any potential lead and/or copper sources within the building.

The Team is in the process of replacing all drinking water fixtures in the building. Once replacements are completed, the Team will return and conduct an additional sampling assessment on the new fixtures.

The results of the December 30, 2015, sampling assessments are found below:

Water Service Information

An inspection of the water main inside the building yielded an eight inch cast or ductile iron pipe that connected to a four inch galvanized line. A split meter was present for lawn irrigation.

Fixtures with Lead Levels Greater Than 15 Parts per Billion

Based on the sampling conducted, the following fixtures were found to have lead water level results greater than 15 parts per billion (ppb).[1]

Location:	Drinking Water Bubbler, East Hall next to Room 309 (DW008)[2]
Results:	P1=54 parts per billion, P2=7 parts per billion
	F01=34 parts per billion, F02=65 parts per billion
Location:	Drinking Water Bubbler, East Hall next to Room 309 (DW009)[3]
Results:	P1=47 parts per billion, P2=53 parts per billion
	F01=82 parts per billion, F02=55 parts per billion
Location:	Drinking Water Bubbler, East Hall next to Room 309 (DW010)
Results:	P1=44 parts per billion, P2=23 parts per billion
	F01=39 parts per billion, F02=24 parts per billion

[1] After a 12-hour stagnation period, the Team collected four (4) samples at each of the fixtures identified. Two (2) initial, 125-mililiter samples (P1 and P2), were collected immediately after turning on the tap. The water was then flushed for 30 seconds and a third, 125-mililiter sample (F01) was collected. Finally, the water was flushed for another two minutes, and the fourth 125-mililiter sample (F02) was collected. These samples were used to determine the impact of any lead sources in and around each specific fixture and its connecting plumbing.

[2] This fixture also has a copper water level over 1.3 parts per million (ppm), reflected later in this report.
[3] This fixture also has a copper water level over 1.3 parts per million (ppm), reflected later in this report.

Location: Drinking Water Bubbler, Room 310, (DW011)
Results: P1=149 parts per billion, P2=44 parts per billion
F01=29 parts per billion, F02=4 parts per billion

Location: Classroom Faucet, Room 310, (CF013)
Results: P1=67 parts per billion, P2=33 parts per billion
F01=10 parts per billion, F02=1 part per billion

Location: Classroom Faucet, Workroom 427, (CF014)[4]
Results: P1=236 parts per billion, P2=647 parts per billion
F01=36 parts per billion, F02=9 parts per billion

Location: Kitchen Faucet, Room B414 (KC015)[5]
Results: P1=304 parts per billion, P2=248 parts per billion
F01=8 parts per billion, F02=6 parts per billion

Location: Drinking Water Bubbler, Hallway across from Room 420, (DW017)
Results: P1=12 parts per billion, P2=13 parts per billion
F01=387 parts per billion, F02=72 parts per billion

Location: Drinking Water Bubbler, Hallway across from Room 420, (DW018)
Results: P1=59 parts per billion, P2=68 parts per billion
F01=49 parts per billion, F02=11 parts per billion

Location: Drinking Water Bubbler, Hallway across from Room 420 (DW019)
Results: P1=190 parts per billion, P2=34 parts per billion
F01=140 parts per billion, F02=20 parts per billion

Location: Drinking Water Bubbler, Hallway across from Room 407 (DW022)
Results: P1=18 parts per billion, P2=5 parts per billion
F01=3 parts per billion, F02=3 parts per billion

Location: Classroom Faucet, Room 216A, (CF024)
Results: P1=41 parts per billion, P2=85 parts per billion
F01=10 parts per billion, F02=7 parts per billion

Location: Classroom Faucet, Room 217, (CF025)
Results: P1=19 parts per billion, P2=12 parts per billion
F01=6 parts per billion, F02=2 parts per billion

[4] This fixture also has a copper water level over 1.3 parts per million (ppm), reflected later in this report.
[5] This fixture also has a copper water level over 1.3 parts per million (ppm), reflected later in this report.

Location:	Drinking Water Bubbler, Across from Room 106A, (DW026)
Results:	P1=46 parts per billion, P2=41 parts per billion F01=11 parts per billion, F02=6 parts per billion
Location:	Drinking Water Bubbler, Across from Room 106A, (DW027)
Results:	P1=29 parts per billion, P2=11 parts per billion F01=10 parts per billion, F02=12 parts per billion
Location:	Kitchen Faucet, Room 211, (KC028)
Results:	P1=16 parts per billion, P2=6 parts per billion F01=7 parts per billion, F02=3 parts per billion
Location:	Drinking Water Bubbler, Across from Room 220, (DW029)[6]
Results:	P1=521 parts per billion, P2=61 parts per billion F01=27 parts per billion, F02=31 parts per billion
Location:	Drinking Water Bubbler, Across from Room 220, (DW030)[7]
Results:	P1=226 parts per billion, P2=28 parts per billion F01=38 parts per billion, F02=25 parts per billion
Location:	Drinking Water Bubbler, Across from Room 220, (DW031)
Results:	P1=217 parts per billion, P2=20 parts per billion F01=15 parts per billion, F02=12 parts per billion
Location:	Drinking Water Bubbler, Across from Room 207, (DW032)[8]
Results:	P1=478 parts per billion, P2=85 parts per billion F01=34 parts per billion, F02=28 parts per billion
Location:	Drinking Water Bubbler, Across from Room 207, (DW033)[9]
Results:	P1=301 parts per billion, P2=13 parts per billion F01=16 parts per billion, F02=12 parts per billion
Location:	Drinking Water Bubbler, Across from Room 207, (DW034)
Results:	P1=180 parts per billion, P2=10 parts per billion F01=12 parts per billion, F02=14 parts per billion

[6] This fixture also has a copper water level over 1.3 parts per million (ppm), reflected later in this report.
[7] This fixture also has a copper water level over 1.3 parts per million (ppm), reflected later in this report.
[8] This fixture also has a copper water level over 1.3 parts per million (ppm), reflected later in this report.
[9] This fixture also has a copper water level over 1.3 parts per million (ppm), reflected later in this report.

Location: Classroom Faucet, Room 207, (CF035)
Results: P1=13 parts per billion, P2=121 parts per billion
F01=4 parts per billion, F02=22 parts per billion

Location: Classroom Faucet, Room 314, (CF036)
Results: P1=44 parts per billion, P2=163 parts per billion
F01=16 parts per billion, F02=3 parts per billion

Location: Drinking Water Bubbler, Cafeteria, (DW041)
Results: P1=10 parts per billion, P2=13 parts per billion
F01=4 parts per billion, F02=17 parts per billion

Location: Drinking Water Bubbler, Pool, (DW043)
Results: P1=126 parts per billion, P2=25 parts per billion
F01=4 parts per billion, F02=1 part per billion

Location: Drinking Water Bubbler, Room 504, (DW046)
Results: P1=19 parts per billion, P2=2 parts per billion
F01=2 parts per billion, F02=11 parts per billion

Location: Drinking Water Bubbler, Room 506, (DW047)
Results: P1=27 parts per billion, P2=5 parts per billion
F01=2 parts per billion, F02=3 parts per billion

Fixtures with Copper Levels Greater Than 1.3 Parts per Million

Based on the sampling conducted, the following fixtures were found to have copper water level results greater than 1.3 parts per million (ppm).[1]

Location: Drinking Water Bubbler, East Hall next to Room 309 (DW008)
Results: P1=0.64 parts per million, P2=0.07 parts per million
F01=0.46 parts per million, F02=2.02 parts per million

Location: Drinking Water Bubbler, East Hall next to Room 309 (DW009)
Results: P1=0.46 parts per million, P2=1.50 parts per million
F01=2.50 parts per million, F02=1.52 parts per million

Location: Classroom Faucet, Workroom 427, (CF014)
Results: P1=0.70 parts per million, P2=1.60 parts per million
F01=0.65 parts per million, F02=0.28 parts per million

Location:	Kitchen Faucet, Room B414 (KC015)
Results:	P1=1.17 parts per million, P2=1.59 parts per million F01=0.14 parts per million, F02=0.13 parts per million
Location:	Drinking Water Bubbler, Across from Room 220, (DW029)
Results:	P1=2.81 parts per million, P2=0.49 parts per million F01=0.38 parts per million, F02=0.40 parts per million
Location:	Drinking Water Bubbler, Across from Room 220, (DW030)
Results:	P1=1.34 parts per million, P2=0.33 parts per million F01=0.40 parts per million, F02=0.28 parts per million
Location:	Drinking Water Bubbler, Across from Room 207, (DW032)
Results:	P1=1.96 parts per million, P2=0.69 parts per million F01=0.29 parts per million, F02=0.31 parts per million
Location:	Drinking Water Bubbler, Across from Room 207, (DW033)
Results:	P1=1.75 parts per million, P2=0.11 parts per million F01=0.18 parts per million, F02=0.16 parts per million

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Consecutive Sampling Results

This consecutive sampling was used to determine the impact of any lead sources located deep in the supply plumbing of the building. Results of the consecutive sample monitoring are listed in the table below.

Consecutive Sample No.	1	2	3	4	5	6	7	8	9	10
LOCATION	**LEAD RESULT (PARTS PER BILLION; ND = NOT-DETECTED)**									
Room 310 Classroom Faucet (CF013)	3	2	1	1	2	ND	ND	ND	ND	ND
Room 414 Classroom Faucet (CF023)	2	2	2	2	2	2	2	2	2	2
Room 214 Classroom Faucet (CF036)	21	19	5	4	2	2	3	2	2	2
Community Room Kitchen Faucet (KC039)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Men's Dressing Room Bathroom Faucet (BF052)	4	1	ND	ND	ND	1	1	ND	ND	ND